



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,300	01/21/2004	Meng-Seng Chen		3229

7590 08/14/2006

Chiou, Ta-gang
14th Floor
One Broadway
Cambridge, MA 02142

EXAMINER

PORTIS, SHANTELL L

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,300	CHEN ET AL.	
	Examiner	Art Unit	
	Shantell Portis	2617	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (Lee), U.S. Patent No. 6,138,025.

Regarding Claims 1 and 10, Lee discloses a method for determining a plurality of registration areas in a wireless communication system, comprising the steps of: determining a plurality of mobility data (loading characteristics) corresponding to a plurality of first partition units respectively and an overall cost (paging load and registration load) of a plurality of first registration areas, wherein each of the first registration areas includes at least one of the first partition units; generating a plurality of second registration areas through a registration area determining procedure, wherein the second registration areas are constructed based on the mobility data of the first partition units; determining an overall cost of the second registration areas; comparing the overall cost of the first registration areas and the second registration areas; and determining a plurality of third registration areas and second partition units based on the result of comparison, wherein at least one of the second partition units is generated by combining at least two of the first partition units based on the mobility data of the corresponding first partition units when the overall cost of the first registration areas is

lower than or equal to the overall cost of the second registration areas, at least one of the second partition units is generated by partitioning one of the first partition units based on the mobility data of the corresponding first partition units when the overall cost of the first registration areas is higher than the overall cost of the second registration areas (Col. 5, line 16-Col. 6, line 7).

Regarding Claims 2 and 11, Lee discloses the method of claims 1 and 10; wherein the method is executed recursively until a plurality of $(2n)$ th registration areas and n th partition units are determined that each of the $(2n)$ th registration areas includes only one n th partition unit and the overall cost of the $(2n-1)$ th registration areas is smaller than or an equal to the overall cost of the $(2n)$ th registration areas (Col. 11, lines 37-63).

Regarding Claims 3 and 12, Lee discloses the method of claims 1 and 10, wherein the mobility data at least include a plurality of mobility rates (Col. 7, lines 13-25).

Regarding Claims 4 and 13, Lee discloses the method of claims 3 and 12, wherein the mobility rates can be determined by a plurality of traffic sources in the wireless communication system through at least one of the following operations which are gathering historical data, simulation and estimation (Col. 7, lines 13-25).

Regarding Claims 5 and 14, Lee discloses the method of claims 1 and 10, wherein the first and the second partition units generating/determining step may be executed based on a plurality of loading limits of the wireless communication system (Col. 6, line 64-Col. 7, line 12).

Regarding Claims 6 and 15, Lee discloses the method of claims 5 and 14, wherein the loading limits at least include a plurality of constraints corresponding to any physical or virtual equipment in the wireless communication system (Col. 4, lines 51-62).

Regarding Claims 7 and 16, Lee discloses the method of claims 1 and 10, wherein the registration area partitioning procedure may be at least one of the K-L algorithm and the F-M algorithm (Col. 11, lines 14-36).

Regarding Claims 8 and 17, Lee discloses the method of claims 1 and 10, wherein the registration area can be determined by at least one of the following: a location area (LA) of a GSM system, a routing area (RA) of a packet-switched or a 3G systems, a registration location area (RLA)/overlapping location area (OLA) and a paging area of a PDC and a PHS system, a cell area (CA) of a 3G systems, and an UTRAN Registration Area of a UMTSWCDMA system (Col. 4, line 51-Col. 5, line 4).

Regarding Claims 9 and 18, Lee discloses the method of claims 1 and 10, wherein when the first partition units are the non-partitionable, generating the second partition units by combining at least two of the first partition units based on the mobility data of the corresponding first partition units is done (Col. 12, line 6-Col. 13, line 23).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shantell Portis whose telephone number is 571-272-0886. The examiner can normally be reached on Monday-Friday 7:00am-3:30pm EST.

Application/Control Number: 10/760,300
Art Unit: 2617

Page 5

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


SLP


LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER